II. CLAIMS

In the Claims:

1.(Currently Amended) A recombinant cellular system, comprising an isolated animal host cell, comprising the following recombinant proteins:

- a recombinant, specific G protein-coupled receptor,

- a recombinant CNGA2 Ca2+ permeable channel and

- a substance selected from the group consisting of connexins, a cyclase that is harmonised with the specific G protein-coupled receptor and a recombinant G-protein that is harmonised with the specific G protein-coupled receptor,

where the recombinant specific G protein-coupled receptor, is selected from the group consisting of pheromone receptors and ~~the~~ olfactory receptors, type A guanylyl-cyclases, and type G guanylyl-cyclases.

2. (Withdrawn) The recombinant cellular system according to claim 1, where the substance is a recombinant protein selected from the group of connexins.

3.(Withdrawn) The recombinant cellular system according to claim 1, wherein the recombinant specific G protein-coupled receptor is selected from type A guanylyl-cyclases and type G guanylyl-cyclases.

4.(Withdrawn) The recombinant cellular system according to claim 1 where the substance is a cyclase that is harmonised with the specific G protein-coupled receptor.

5.(Currently Amended) The recombinant cellular system according to claim 1, wherein the recombinant, specific G protein-coupled receptor is selected from: pheromone receptors,

hormone receptors and ~~the~~ olfactory receptors.

6.(Withdrawn) The recombinant cellular system according to claim 1 where the substance is a recombinant G-protein that is harmonised with the specific G protein-coupled receptor.

7.(Previously Presented) The recombinant cellular system according to claim 1 wherein the animal host cell is selected from murine cell lines and human cell lines.

8.(Currently Amended) The recombinant cellular system according to claim 1, wherein the cellular system comprises a ~~potential~~ recombinant, specific G protein-coupled receptor.

9.(Previously Presented) The recombinant cellular system according to claim 7, selected from the group of cellular systems comprising: HeLaCx43/CNGA2/01fr49; HeLa-Cx43/CNGA2/G-alpha-olf; HeLa-Cx43/CNGA2/G-alphaolf/Olfr 49; HeLa-Cx43/CNGA2/G-alpha-olf/O1fr41; HeLa-Cx43/CNGA2/G-alphaolf/Olfr 6 and HeLa-Cx43/CNGA2/G-alpha-olf/OR1A1.

10.(Previously Presented) The recombinant cellular system according to claim 1, wherein the recombinant proteins are present stably.

11.(Previously Presented) The recombinant cellular system HeLa- Cx43/CNGA2/G-alpha-olf, as deposited on April 20, 2004 at the DSMZ - Deutsche Sammlung von Mikroorganismen and Zellkulturen GmbH in Mascheroder Weg lb, D38124 Braunschweig with the deposit number DSM ACC2649.

12.(Withdrawn) A method for producing a recombinant cellular system, comprising the steps of:

- providing of an animal host cell,

- introducing a recombinant specific G protein-coupled

receptor or a potential recombinant specific G protein-coupled receptor, and

- introducing the recombinant CNGA2 Ca2+ permeable channel.

13.(Withdrawn) The method according to claim 12, further comprising the step of:

- introducing a recombinant protein from the group of the connexins.

14.(Withdrawn) The method according to claim 12, further comprising the step of:

- introducing a cyclase that is harmonised with the specific G protein-coupled receptor.

15.(Withdrawn) The method according to claim 12 further comprising the step of:

- introducing of a recombinant G-protein that is harmonised with the specific G protein-coupled receptor.

16.(Withdrawn)The method according to claim 12, wherein the introducing method step is selected from: (Ca2+-phosphate-)transfection, lipofection or electroporation,

optionally followed by the step of integration into the genome with the aid of a recombinase or antibiotic-selection cloning, or the step of transduction.

17.(Withdrawn) The method for identifying receptor activating substances, comprising the method steps of providing a recombinant cellular system according to claim 1,

- contacting the cellular system with a potential G protein-coupled receptor activating substance, and

- measuring the activation or inhibition of the Ca2+ influx

into the cellular system cell.

18.(Withdrawn) The method according to claim 17, wherein the potential G protein-coupled receptor inducing substance is selected from odorants, pheromones, and hormones.

19.(Withdrawn) The method according to claim 17, wherein the measuring of the Ca2+ influx into the cell includes: loading of the cell with Fura-2-AM or Fluo-4-AM, and measuring the emission-wavelength at 515 nm.

20.(Withdrawn) The method according to claim 17, wherein the cellular system is pre-treated with an enhancer.

21.(Withdrawn) A method for producing a pharmaceutical composition, comprising the steps of:

- performing a method according to claim 17, and

- formulating the obtained G protein-coupled receptor inducing substance with auxiliary agents and additives.

22.(Withdrawn) A method for identifying of G protein-coupled receptors, comprising the steps of:

- providing a recombinant cellular system according to claim 8,

- contacting of the cellular system with a receptor-activating substance or presumably receptor-activating substance, and

- measuring the activation or inhibition of the Ca2+ influx into the cell.

23.(Withdrawn) The method according to claim 17, wherein the method is performed in a high-throughput-environment.

24.(Cancelled)

25.(Cancelled)

26.(Previously Presented) The recombinant cellular system of claim 1 where the G protein-coupled receptor is selected from the group consisting of OR1A1, OR1A2, Olfr43, Olfr49, MOR261-10, MOR267-1, LOC31758, Olfr41 and Olf6 and the connexin is selected from the group consisting of Cx43 and Cx26.

27. (Previously Presented) The recombinant cellular system of claim 9 where the cellular system is HeLa-Cx43/CNGA2/G-alpha-olf.